

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-130415-1

Client Project/Site: GKM - Region 8 (LTM)

For:

Weston Solutions, Inc.

1435 Garrison Street

Suite 100

Lakewood, Colorado 80215

Attn: Jeff Bryniarski



Authorized for release by:

10/20/2016 3:11:34 PM

Sheila Hoffman, Project Manager II

(912)354-7858 e.3004

sheila.hoffman@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

Method Summary

Client: Weston Solutions, Inc.
Project/Site: GKM - Region 8 (LTM)

TestAmerica Job ID: 680-130415-1

Method	Method Description	Protocol	Laboratory
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN
Moisture	Percent Moisture	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Weston Solutions, Inc.
Project/Site: GKM - Region 8 (LTM)

TestAmerica Job ID: 680-130415-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-130415-1	32nd St Bridge_SED_092816	Solid	09/28/16 09:00	09/29/16 09:40
680-130415-2	A68_SED_092716	Solid	09/27/16 11:45	09/29/16 09:40
680-130415-3	A72_SED_092716	Solid	09/27/16 13:35	09/29/16 09:40
680-130415-4	Animas_RotaryPark_SED_092816	Solid	09/28/16 12:00	09/29/16 09:40
680-130415-5	CC48_SED_092716	Solid	09/27/16 15:00	09/29/16 09:40
680-130415-6	M34_SED_092716	Solid	09/27/16 09:20	09/29/16 09:40
680-130415-7	Oxbow Park_SED_092816	Solid	09/28/16 09:50	09/29/16 09:40

Definitions/Glossary

Client: Weston Solutions, Inc.
Project/Site: GKM - Region 8 (LTM)

TestAmerica Job ID: 680-130415-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Weston Solutions, Inc.
Project/Site: GKM - Region 8 (LTM)

TestAmerica Job ID: 680-130415-1

Job ID: 680-130415-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: GKM - Region 8 (LTM)

Report Number: 680-130415-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 09/29/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.7 C.

TOTAL ORGANIC CARBON

Samples 32nd St Bridge_SED_092816 (680-130415-1), A68_SED_092716 (680-130415-2), A72_SED_092716 (680-130415-3), Animas_RotaryPark_SED_092816 (680-130415-4), CC48_SED_092716 (680-130415-5), M34_SED_092716 (680-130415-6) and Oxbow Park_SED_092816 (680-130415-7) were analyzed for Total Organic Carbon in accordance with EPA SW-846 9060A. The samples were analyzed on 10/13/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS/MOISTURE

Samples 32nd St Bridge_SED_092816 (680-130415-1), A68_SED_092716 (680-130415-2), A72_SED_092716 (680-130415-3), Animas_RotaryPark_SED_092816 (680-130415-4), CC48_SED_092716 (680-130415-5), M34_SED_092716 (680-130415-6) and Oxbow Park_SED_092816 (680-130415-7) were analyzed for Percent Solids/Moisture in accordance with TestAmerica SOP. The samples were analyzed on 10/11/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample Results

Client: Weston Solutions, Inc.
Project/Site: GKM - Region 8 (LTM)

TestAmerica Job ID: 680-130415-1

Client Sample ID: 32nd St Bridge_SED_092816

Date Collected: 09/28/16 09:00

Date Received: 09/29/16 09:40

Lab Sample ID: 680-130415-1

Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7	U	4.0	1.7	g/Kg	-		10/13/16 16:57	1

Client Sample ID: A68_SED_092716

Date Collected: 09/27/16 11:45

Date Received: 09/29/16 09:40

Lab Sample ID: 680-130415-2

Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7	U	4.0	1.7	g/Kg	-		10/13/16 16:48	1

Client Sample ID: A72_SED_092716

Date Collected: 09/27/16 13:35

Date Received: 09/29/16 09:40

Lab Sample ID: 680-130415-3

Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7	U	4.0	1.7	g/Kg	-		10/13/16 16:59	1

Client Sample ID: Animas_RotaryPark_SED_092816

Date Collected: 09/28/16 12:00

Date Received: 09/29/16 09:40

Lab Sample ID: 680-130415-4

Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	17		4.0	1.7	g/Kg	-		10/13/16 17:01	1

Client Sample ID: CC48_SED_092716

Date Collected: 09/27/16 15:00

Date Received: 09/29/16 09:40

Lab Sample ID: 680-130415-5

Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7	U	4.0	1.7	g/Kg	-		10/13/16 17:03	1

Client Sample ID: M34_SED_092716

Date Collected: 09/27/16 09:20

Date Received: 09/29/16 09:40

Lab Sample ID: 680-130415-6

Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7	U	4.0	1.7	g/Kg	-		10/13/16 17:06	1

Client Sample ID: Oxbow Park_SED_092816

Date Collected: 09/28/16 09:50

Date Received: 09/29/16 09:40

Lab Sample ID: 680-130415-7

Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7	U	4.0	1.7	g/Kg	-		10/13/16 17:08	1

TestAmerica Savannah

QC Sample Results

Client: Weston Solutions, Inc.
Project/Site: GKM - Region 8 (LTM)

TestAmerica Job ID: 680-130415-1

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-346486/4

Matrix: Solid

Analysis Batch: 346486

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7	U	4.0	1.7	g/Kg			10/13/16 16:46	1

Lab Sample ID: LCS 280-346486/3

Matrix: Solid

Analysis Batch: 346486

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	123	108		g/Kg		88	46 - 130

Lab Sample ID: 680-130415-2 MS

Matrix: Solid

Analysis Batch: 346486

Client Sample ID: A68_SED_092716

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	1.7	U	120	130		g/Kg		108	46 - 130

Lab Sample ID: 680-130415-2 MSD

Matrix: Solid

Analysis Batch: 346486

Client Sample ID: A68_SED_092716

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	1.7	U	120	127		g/Kg		106	46 - 130	2	20

QC Association Summary

Client: Weston Solutions, Inc.
Project/Site: GKM - Region 8 (LTM)

TestAmerica Job ID: 680-130415-1

General Chemistry

Analysis Batch: 346097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130415-1	32nd St Bridge_SED_092816	Total/NA	Solid	Moisture	
680-130415-2	A68_SED_092716	Total/NA	Solid	Moisture	
680-130415-3	A72_SED_092716	Total/NA	Solid	Moisture	
680-130415-4	Animas_RotaryPark_SED_092816	Total/NA	Solid	Moisture	
680-130415-5	CC48_SED_092716	Total/NA	Solid	Moisture	
680-130415-6	M34_SED_092716	Total/NA	Solid	Moisture	
680-130415-7	Oxbow Park_SED_092816	Total/NA	Solid	Moisture	
680-130415-2 DU	A68_SED_092716	Total/NA	Solid	Moisture	

Analysis Batch: 346486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-130415-1	32nd St Bridge_SED_092816	Total/NA	Solid	9060A	
680-130415-2	A68_SED_092716	Total/NA	Solid	9060A	
680-130415-3	A72_SED_092716	Total/NA	Solid	9060A	
680-130415-4	Animas_RotaryPark_SED_092816	Total/NA	Solid	9060A	
680-130415-5	CC48_SED_092716	Total/NA	Solid	9060A	
680-130415-6	M34_SED_092716	Total/NA	Solid	9060A	
680-130415-7	Oxbow Park_SED_092816	Total/NA	Solid	9060A	
MB 280-346486/4	Method Blank	Total/NA	Solid	9060A	
LCS 280-346486/3	Lab Control Sample	Total/NA	Solid	9060A	
680-130415-2 MS	A68_SED_092716	Total/NA	Solid	9060A	
680-130415-2 MSD	A68_SED_092716	Total/NA	Solid	9060A	

Lab Chronicle

Client: Weston Solutions, Inc.
Project/Site: GKM - Region 8 (LTM)

TestAmerica Job ID: 680-130415-1

Client Sample ID: 32nd St Bridge_SED_092816

Lab Sample ID: 680-130415-1

Date Collected: 09/28/16 09:00

Matrix: Solid

Date Received: 09/29/16 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			346486	10/13/16 16:57	SVC	TAL DEN
		Instrument ID: WC_Leco								
Total/NA	Analysis	Moisture		1			346097	10/11/16 22:24	RSM	TAL DEN
		Instrument ID: NOEQUIP								

Client Sample ID: A68_SED_092716

Lab Sample ID: 680-130415-2

Date Collected: 09/27/16 11:45

Matrix: Solid

Date Received: 09/29/16 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			346486	10/13/16 16:48	SVC	TAL DEN
		Instrument ID: WC_Leco								
Total/NA	Analysis	Moisture		1			346097	10/11/16 22:24	RSM	TAL DEN
		Instrument ID: NOEQUIP								

Client Sample ID: A72_SED_092716

Lab Sample ID: 680-130415-3

Date Collected: 09/27/16 13:35

Matrix: Solid

Date Received: 09/29/16 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			346486	10/13/16 16:59	SVC	TAL DEN
		Instrument ID: WC_Leco								
Total/NA	Analysis	Moisture		1			346097	10/11/16 22:24	RSM	TAL DEN
		Instrument ID: NOEQUIP								

Client Sample ID: Animas_RotaryPark_SED_092816

Lab Sample ID: 680-130415-4

Date Collected: 09/28/16 12:00

Matrix: Solid

Date Received: 09/29/16 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			346486	10/13/16 17:01	SVC	TAL DEN
		Instrument ID: WC_Leco								
Total/NA	Analysis	Moisture		1			346097	10/11/16 22:24	RSM	TAL DEN
		Instrument ID: NOEQUIP								

Client Sample ID: CC48_SED_092716

Lab Sample ID: 680-130415-5

Date Collected: 09/27/16 15:00

Matrix: Solid

Date Received: 09/29/16 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			346486	10/13/16 17:03	SVC	TAL DEN
		Instrument ID: WC_Leco								

TestAmerica Savannah

Lab Chronicle

Client: Weston Solutions, Inc.
Project/Site: GKM - Region 8 (LTM)

TestAmerica Job ID: 680-130415-1

Client Sample ID: CC48_SED_092716

Lab Sample ID: 680-130415-5

Date Collected: 09/27/16 15:00

Matrix: Solid

Date Received: 09/29/16 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			346097	10/11/16 22:24	RSM	TAL DEN
Instrument ID: NOEQUIP										

Client Sample ID: M34_SED_092716

Lab Sample ID: 680-130415-6

Date Collected: 09/27/16 09:20

Matrix: Solid

Date Received: 09/29/16 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			346486	10/13/16 17:06	SVC	TAL DEN
Instrument ID: WC_Leco										
Total/NA	Analysis	Moisture		1			346097	10/11/16 22:24	RSM	TAL DEN
Instrument ID: NOEQUIP										

Client Sample ID: Oxbow Park_SED_092816

Lab Sample ID: 680-130415-7

Date Collected: 09/28/16 09:50

Matrix: Solid

Date Received: 09/29/16 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			346486	10/13/16 17:08	SVC	TAL DEN
Instrument ID: WC_Leco										
Total/NA	Analysis	Moisture		1			346097	10/11/16 22:24	RSM	TAL DEN
Instrument ID: NOEQUIP										

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

USEPA

Date Shipped: 9/28/2016

Carrier Name FedEx

Gold King Mine Long Term Monitoring

Site #: N/A

Contact Name: Jeff Bryniarski

Contact Phone: 708-284-2490

No: 8-192816-133115-0010

Lab: Test America - Arvada

Lab Phone: 303-736-0100

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	32nd St Bridge SED_092816	TOC	Sediment	9/23/2016	09:00	1	4 oz glass	None	N
	A68_SED_092716	TOC	Sediment	9/27/2016	11:45	3	4 oz glass	None	Y
	A72_SED_092716	TOC	Sediment	9/27/2016	13:35	1	4 oz glass	None	N
	Animas_RotaryPark_SED_092816	TOC	Sediment	9/28/2016	12:00	1	4 oz glass	None	N
	CC48_SED_092716	TOC	Sediment	9/27/2016	15:00	1	4 oz glass	None	N
	M34_SED_092716	TOC	Sediment	9/27/2016	08:20	1	4 oz glass	None	N
	Oxbow Park_SED_092816	TOC	Sediment	9/28/2016	09:50	1	4 oz glass	None	N



280-86777 Chain of Custody BC 10/31/16

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY

Special Instructions Please send all results to jeff.bryniarski@westonsolutions.com 10 day turnaround time

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
See 10/16	<i>[Signature]</i>	10/16/16	See TAD	4-29-16 09:40	1.7785 GAO + method 8/15/16 9-29-16

680-130415

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 680-130415-1

Login Number: 130415

List Source: TestAmerica Savannah

List Number: 1

Creator: Daughtry, Beth A

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

Certification Summary

Client: Weston Solutions, Inc.
Project/Site: GKM - Region 8 (LTM)

TestAmerica Job ID: 680-130415-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Colorado	State Program	8	N/A	12-31-16

Laboratory: TestAmerica Denver

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17
A2LA	ISO/IEC 17025		2907.01	10-31-17
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-17
Arizona	State Program	9	AZ0713	12-19-16
Arkansas DEQ	State Program	6	88-0687	06-01-17
California	State Program	9	2513	08-31-16 *
Connecticut	State Program	1	PH-0686	09-30-18
Florida	NELAP	4	E87667	06-30-17
Georgia	State Program	4	N/A	01-09-17
Illinois	NELAP	5	200017	04-30-17
Iowa	State Program	7	370	11-30-16
Kansas	NELAP	7	E-10166	04-30-17
Louisiana	NELAP	6	02096	06-30-17
Maine	State Program	1	CO0002	03-03-17
Minnesota	NELAP	5	8-999-405	12-31-16
Nevada	State Program	9	CO0026	07-31-17
New Hampshire	NELAP	1	205310	04-28-17
New Jersey	NELAP	2	CO004	06-30-17
New York	NELAP	2	11964	04-01-17
North Carolina (WW/SW)	State Program	4	358	12-31-16
North Dakota	State Program	8	R-034	01-09-17
Oklahoma	State Program	6	8614	08-31-17
Oregon	NELAP	10	4025	01-09-17
Pennsylvania	NELAP	3	68-00664	07-31-17
South Carolina	State Program	4	72002001	01-09-17
Texas	NELAP	6	T104704183-15-11	09-30-17
USDA	Federal		P330-13-00369	12-17-16
Utah	NELAP	8	CO00026	07-31-17
Virginia	NELAP	3	460232	06-14-17
Washington	State Program	10	C583	08-03-17
West Virginia DEP	State Program	3	354	11-30-16
Wisconsin	State Program	5	999615430	08-31-17
Wyoming (UST)	A2LA	8	2907.01	10-31-17

* Certification renewal pending - certification considered valid.

TestAmerica Savannah